Rduch
ELEKTROAKUSTYKA

INSTRUCTION OF
AUTOMATICALLY AMPLIFIERS
TYPE:

AMWL-DSP4
AMWLC-DSP4

AMWL-9DSP4/400
AMWL-9DSP4/600
AMWL-9DSP4/400+100
AMWLC-9DSP4/400
AMWLC-9DSP4/600
AMWLC-9DSP4/400+100

1. Clues for users

- Before putting the amplifier to the 230V currency, please read the following instruction.
- Doing any unknown service to the device by any unauthorized persons makes the depriving of guarantee and can be the cause of the worsening of technical parameters and the safety of using.
- ATTENTION! The device must be supplied from the plug-in socket with the safety circuit connected (socket with grounding wheel).
- In case of changing the plug-in fuse, the plug must be pulled off.
- The producer can introduce some changing to the device in case of modernizations or technical progress, without the necessity to put them into the instruction as far as the basic parameters, that are included in this instruction, are not changed.

The accessories of the amplifier:
- service manual with the guarantee card,
- spare fuse,
- plug-in cable,
- application software CD,

2. Using and general notices.

The modern amplifiers AMC- DSP4 (Powermixer) are designed to be used in sacral buildings, large, closed areas, conference rooms, where the high quality and the hearing of speaking is required. They are cooperating with the 50V, 70V and 100V loud speakers line and with the loud speakers set of altogether impedance $> = 4\ \Omega$.

The amplifier has got: 8 symmetrical microphone line channels to put in the dynamic, capacitive and wireless microphones or the device with line level output and music channel to put in the record player, tuner or CD player (LINE asymmetrical). To record, there is a separate RCA (RECORD) socket.

AMWL-DSP is a modern amplifier equipped in signaling DSP processor that enables precise correction of sound characteristics in buildings with very difficult acoustic conditions. The amplifier activates only those microphones, that are used in that moment, what eliminates sound surrounding influence coming from not used microphone channels. Each 1-8 channel is equipped in symmetrical XLR input, sensitivity regulation, Phantom power.plugged in, microphone/line switch, 100Hz high pass filter, preamplification regulation, and timbre regulation (bas/soprano) designed in front of the case. In 1-8 channels, diodes signal the channel activity and the microphone transposition.

3. Arrangement of elements and sockets.
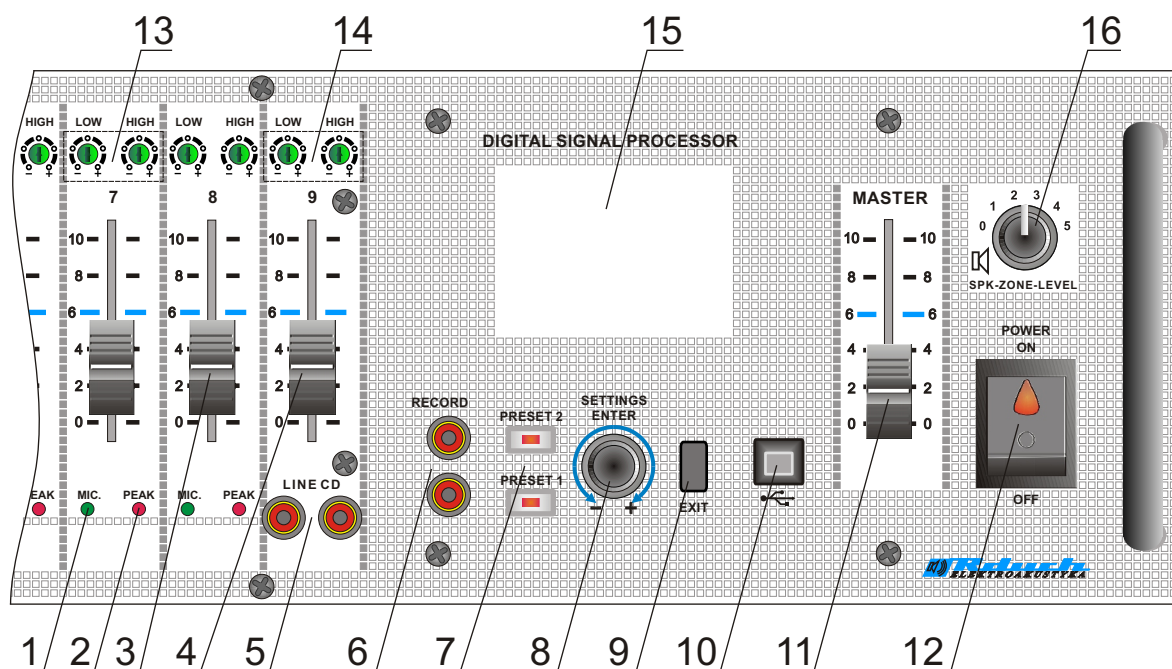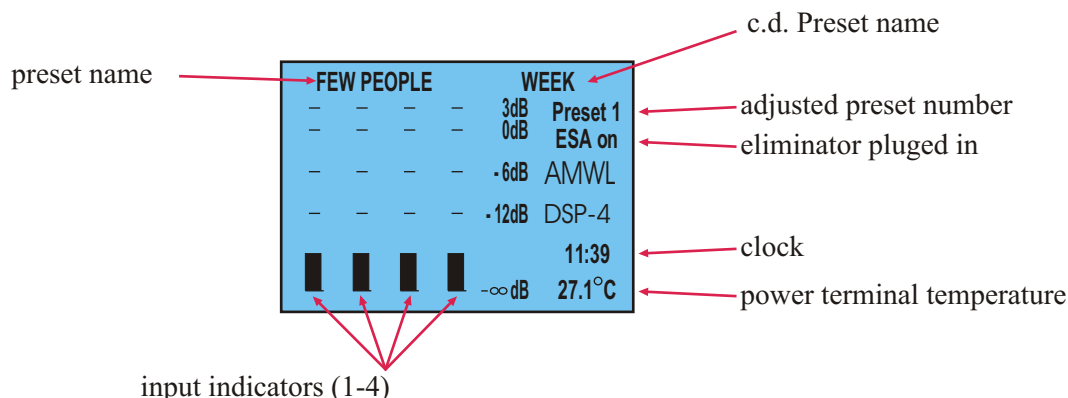

The view of the front board of the AMWL-DSP amplifier.
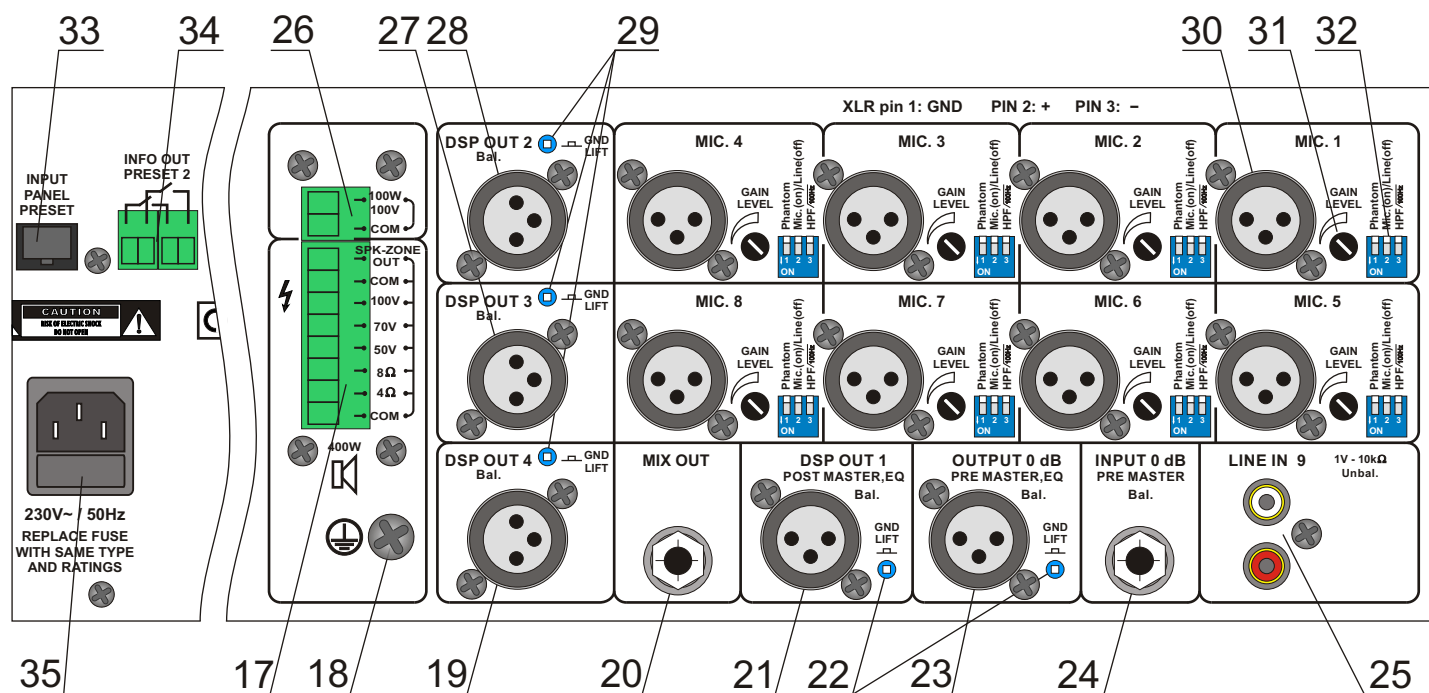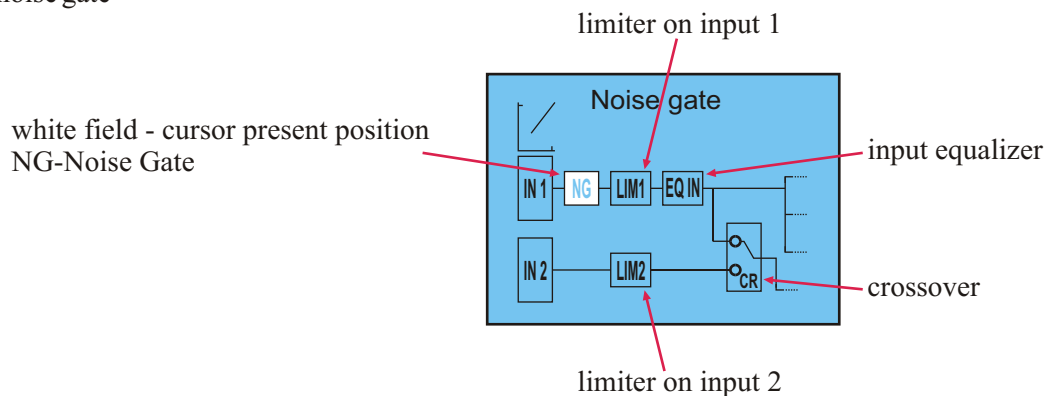
The view of the back board of the AMWL-DSP amplifier

1- a diode signaling the activity of the particular microphone channels
2- a diode signaling the transposition of a certain microphone channel
3- gain potentiometer in microphone channels
4- gain potentiometer of LINE channel
5- Cinch socket for the external sound source to be plugged in
6- recording Cinch socket
7- presets switches on
8- a pulser to service the function on the display
9- EXIT key exit from the menu
10- USB socket for the computer to be plugged in
11- gain sum potentiometer
12- switch on/ switch off of the amplifier's power
13- timbre regulation (bas, soprano) for microphone channels
14- timbre regulation (bas, soprano) for LINE channel
15- liquid crystal display
16- 6 pointed zone regulation
17- a socket of the particular loud speaker outputs and of the zone output
18- grounding
19- XLR socket DSP OUT 4 (Subwoofer option)
20- Jack socket: MIX OUT - symetrical output channels: 9 (Line CD), 0dB and 1-8 enable with programmer
    nr: 2 (MAINSUM-2)- view on page 13.
21- XLR socket: DSP OUT 1
22- grounding disconnect switch
23- XLR socket output before the equalizer and the sum
24- Jack socket 0dB output before the equalizer and the sum
25- Cinch socket asymmetric linear input
26- loudspeaker output socket (option! only in amplifiers with the additional 100 W power tip)
27- XLR socket: DSP OUT 3
28- XLR socket: DSP OUT 2
29- grounding disconnect switch
30- XLR socket in particular channels (1-8)
31- the particular outputs sensitivity regulation
32- 3 positioned switch: 1 Phantom power on/off
                            2 MIC / LINE switch
                            3 100 Hz high pass filter on / off
33- RJ 45 socket Preset steering panel input
34- output socket informing about Preset 2 switched on- this socket can also act to control (set off) an additional
    speaker circiut that is used only in Preset 2.
35- 230 V ~/ 50 Hz power socket

4. Amplifier's menu control.

After amplifier's connection to 230V currency by a given cable and power input (switch no 12), (no 15) on the display, Our company's logo appears, and after several seconds, there is a given screen.
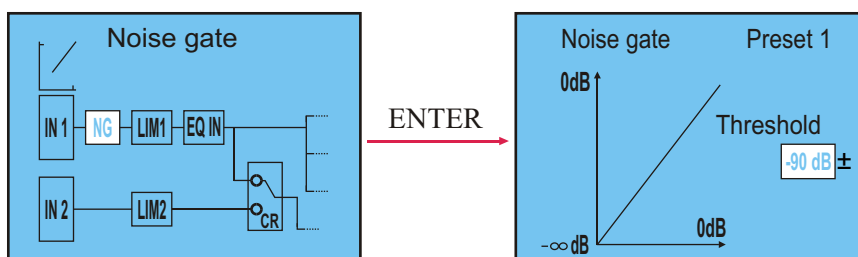

preset name → FEW PEOPLE / WEEK ← c.d. Preset name
3dB Preset 1 ← adjusted preset number
0dB ESA on ← eliminator pluged in
-6dB AMWL
-12dB DSP-4
11:39 ← clock
-∞dB 27.1°C ← power terminal temperature

input indicators (1-4)

To service the menu, use the pulser handwheel (8) - press it, to get in the settings mode. Then, there is the next screen "noise gate"

limiter on input 1

white field - cursor present position
NG-Noise Gate

input equalizer

Noise gate
IN 1 — NG — LIM1 — EQ IN
IN 2 — LIM2 — CR ← crossover
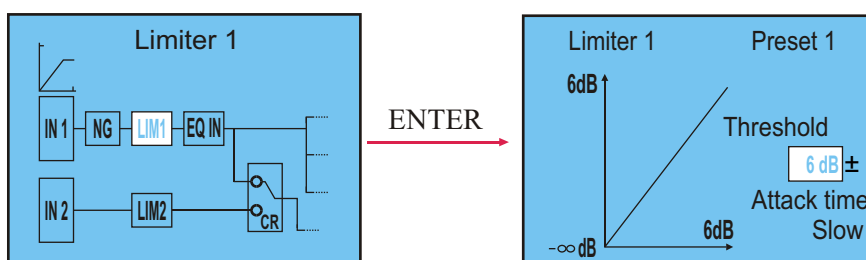
limiter on input 2

Turning the handwheel(8) left or right, there are other menu's parts (previous or next parts). To come into the chosen part press handwheel (8) (ENTER). To come back to the previous part press (EXIT) (9).

The first setting part is NG - noise gate

Noise gate
IN 1 — NG — LIM1 — EQ IN
IN 2 — LIM2 — CR

ENTER →

Noise gate   Preset 1
0dB
Threshold
-90 dB ±
-∞dB   0dB

Turning the handwheel (8) left or right, the value edge of the noise gate can be adjusted from -24dB to -90dB.
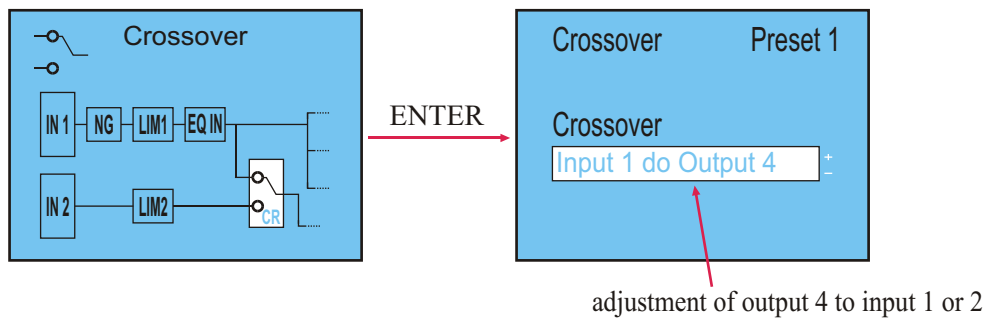
Another setting part is the limiter field where, the value edge can be adjusted from -30dB to +6dB and the time of the attack: slow, medium or fast. The same can be done for the limiter no2 - LIM2.
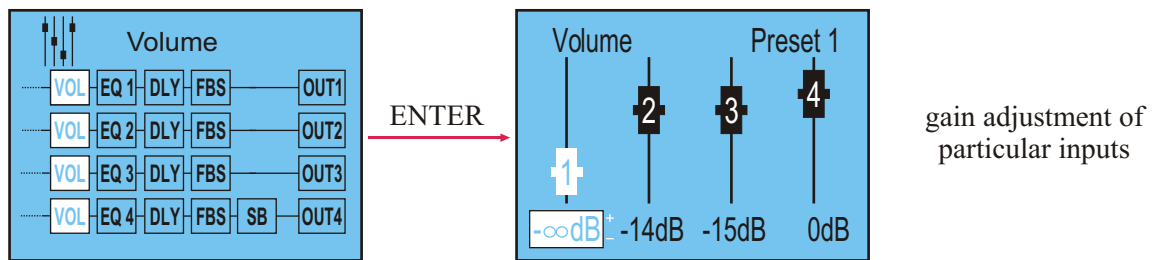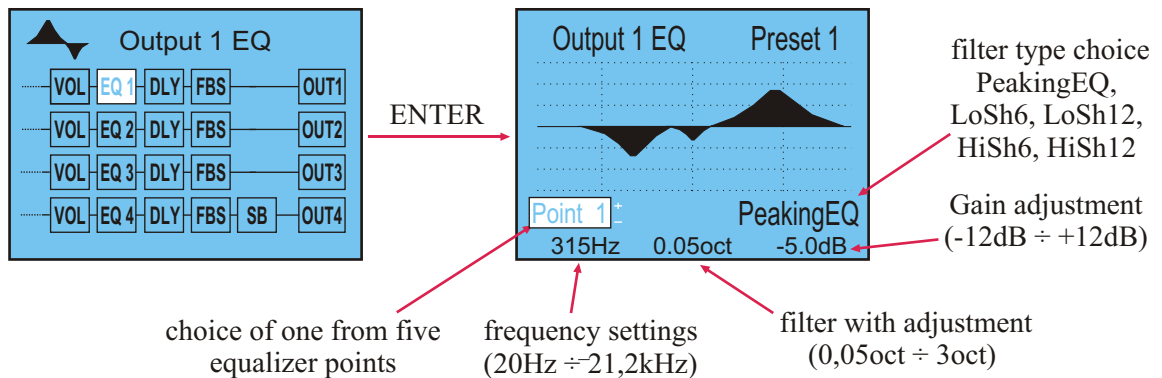

Limiter 1
IN 1 — NG — LIM1 — EQ IN
IN 2 — LIM2 — CR

ENTER →

Limiter 1   Preset 1
6dB
Threshold
6 dB ±
Attack time
-∞dB   6dB   Slow

Equalizer part EQ.

Input EQ	ENTER →	Input EQ 1 Preset 1
IN 1 — NG — LIM1 — EQ IN		
IN 2 — LIM2 — CR		Point 1 PeakingEQ
		28Hz 0.05oct 0.0dB

filter type choice
PeakingEQ,
LoSh6, LoSh12,
HiSh6, HiSh12

choice of one from
ten equalizer's points

frequency
settings
(20Hz ÷ 21,2kHz)

filtrer width setting
(0,05 ÷ 3 oct.)

gain attenuation
adjustment
(-12dB ÷ +12dB)

Crossover part.

Crossover	ENTER →	Crossover Preset 1
IN 1 — NG — LIM1 — EQ IN		Crossover
IN 2 — LIM2 — CR		Input 1 do Output 4

adjustment of output 4 to input 1 or 2

Gain part.

Volume	ENTER →	Volume Preset 1
VOL — EQ 1 — DLY — FBS — OUT1		
VOL — EQ 2 — DLY — FBS — OUT2		2 3 4
VOL — EQ 3 — DLY — FBS — OUT3		1
VOL — EQ 4 — DLY — FBS — SB — OUT4		-∞dB -14dB -15dB 0dB

gain adjustment of
particular inputs

Output equalizer part: EQ1,EQ2,EQ3,EQ4.

Output 1 EQ	ENTER →	Output 1 EQ Preset 1
VOL — EQ 1 — DLY — FBS — OUT1		
VOL — EQ 2 — DLY — FBS — OUT2		
VOL — EQ 3 — DLY — FBS — OUT3		Point 1 PeakingEQ
VOL — EQ 4 — DLY — FBS — SB — OUT4		315Hz 0.05oct -5.0dB

filter type choice
PeakingEQ,
LoSh6, LoSh12,
HiSh6, HiSh12

Gain adjustment
(-12dB ÷ +12dB)

choice of one from five
equalizer points

frequency settings
(20Hz ÷ 21,2kHz)

filter with adjustment
(0,05oct ÷ 3oct)

In the same way, equalizer adjustments for 2,3,4 outputs can be programmed.

Delaying part

Delay	ENTER →	Delay preset 1
VOL — EQ 1 — DLY — FBS — OUT1		Output 1 0.0 m
VOL — EQ 2 — DLY — FBS — OUT2		Output 2 0.0 m
VOL — EQ 3 — DLY — FBS — OUT3		Output 3 0.0 m
VOL — EQ 4 — DLY — FBS — SB — OUT4		Output 4 0.0 m
		Mode m

delaying adjustments
(0 ÷ 85m)

measurements regulation
(m, cm, ms)

Elimanator part.

```
FB Suppressor
VOL — EQ 1 — DLY — FBS ——— OUT1
VOL — EQ 2 — DLY — FBS ——— OUT2
VOL — EQ 3 — DLY — FBS ——— OUT3
VOL — EQ 4 — DLY — FBS — SB — OUT4
```

ENTER →

```
FB Suppressor     preset 1

Select out          Output  1
Method           phase shifter
Frequency              - Hz
```
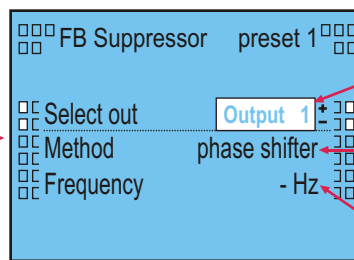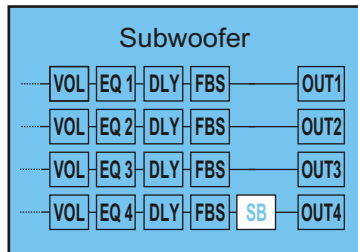
output choice (on which output the eliminator is to be off)

decoupling eliminator method choice (adaptive, phase shifter)

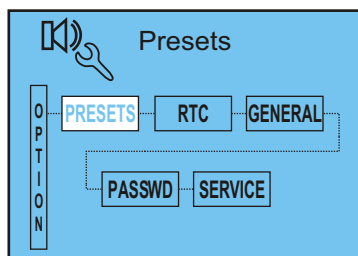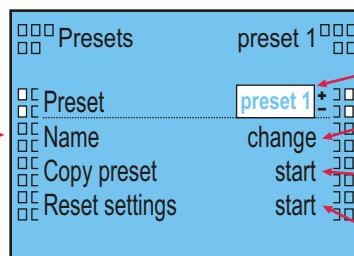frequency choice for phase shifter method

Subwoofer part.

```
Subwoofer
VOL — EQ 1 — DLY — FBS ——— OUT1
VOL — EQ 2 — DLY — FBS ——— OUT2
VOL — EQ 3 — DLY — FBS ——— OUT3
VOL — EQ 4 — DLY — FBS — SB — OUT4
```

ENTER →

```
Subwoofer         preset 1

LP Filter              off
Frequency            200Hz
Slope             6dB/oct.
```
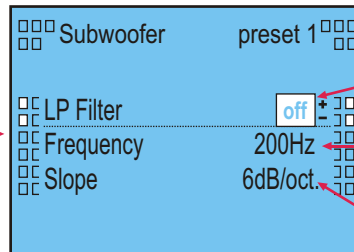
subwoofer turn on/off

filter's cut off frequency adjustment (120 Hz ÷ 472 Hz)

filter slope steepness choice

Presets part.

```
Presets
O  PRESETS   RTC   GENERAL
P
T
I  PASSWD   SERVICE
O
N
```

ENTER →

```
Presets           preset 1

Preset             preset 1
Name               change
Copy preset         start
Reset settings      start
```
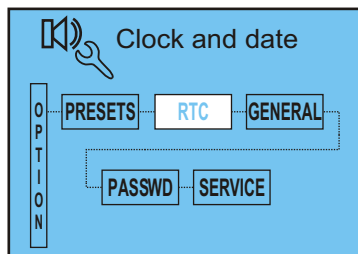
preset choice

renaming preset chosen preset's name edition

copy of chosing preset's settings to the second preset
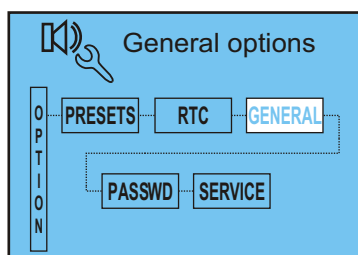
back to previous settings
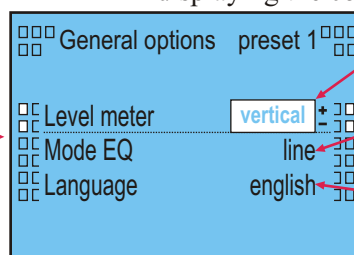
Clock and date part.

```
Clock and date
O  PRESETS   RTC   GENERAL
P
T
I  PASSWD   SERVICE
O
N
```

ENTER →

```
Clock and date    preset 1

Set time           change
Set date           change
Date table         change
Preset 2 in sunday    yes
```
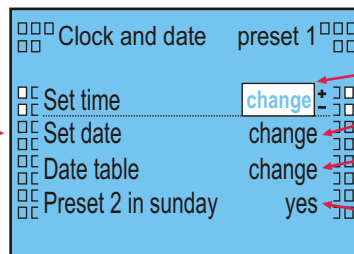
time adjustment
date adjustment
recording dates board for preset 2
automatic change of presetu 2 for Sunday

General options part.

```
General options
O  PRESETS   RTC   GENERAL
P
T
I  PASSWD   SERVICE
O
N
```

ENTER →

```
General options   preset 1

Level meter         vertical
Mode EQ               line
Language            english
```
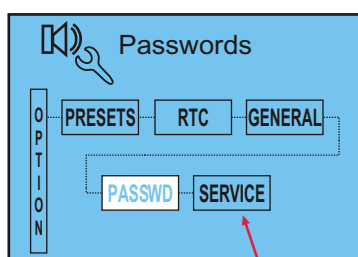
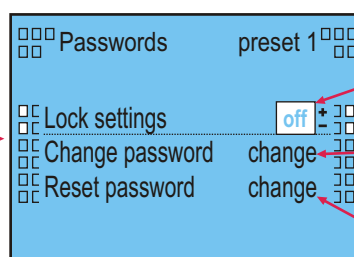adjustments of the possibility of displaying the control indicator (vertical or horizontal)

choice of displaying graphs mode EQ (filled, line)

(language choice polish, english)

Passwords part..

```
Passwords
O  PRESETS   RTC   GENERAL
P
T
I  PASSWD   SERVICE
O
N
```

ENTER →

```
Passwords         preset 1

Lock settings          off
Change password     change
Reset password      change
```

servicing mode (only for servicemen)

password saving settings turn on/off

change of password saving seiings

adjusted password reset - new one is automatically set into zeros (0000)

5. Amplifier's control settings by the computer

All settings introduced by the amplifier's control panel can be also done by the PC computer. To get the possibility of the amplifier control by the computer, the program MWL Easy Manager must be installed (it is on the CD added). MWL Easy Manager program is created only for the configurations of AMWL-DSP4 series.
Licensor is not responsible for any harm of the program operation or for the wrong use of the program.

 MWL Easy Manager installation instruction

I. Program MWL Easy Manager requires the installation of Microsoft. NET Framework 3.5 Service Pack 1
   for Windows NT, XP, 98 system (for Windows Vista and windows 7 systems - there is not necessary).
   Installation file is on CD added. Dotnetfx35.exe platform can be downloaded from the Microsoft

II. In the catalogue VCM Driver you can find drivers for use the USB port from the amplifier AMWL-DSP4
   (CDM2.04.16.exe)- also need to be installed

III. After dotnet35fx.exe installation MWL Easy program can be installed
     Installation file is in Rduch MWLEasyMgr 2.0 Install/Setup.exe

IV. After the program installation, it should work automatically.

V. After switching the amplifier on , program automatically detects port, where the device is installed.
   Switching the amplifier on, is not necessary- parameters can be set in the program and than can be recorded in the
   File first and aflter that the amplifier can be switched on and the data can be copied. To join the amplifier with the
   computer, in the menu " Comunication", the order "join" should be chosen.
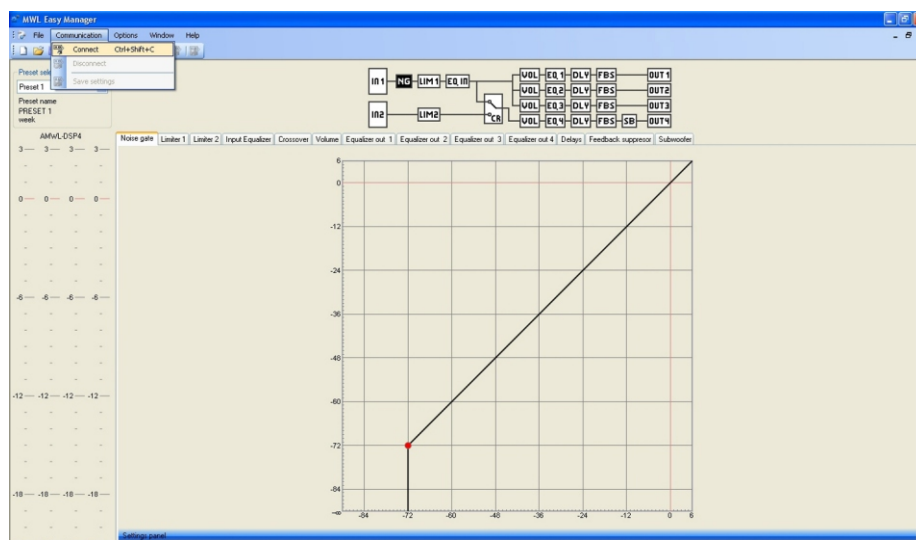
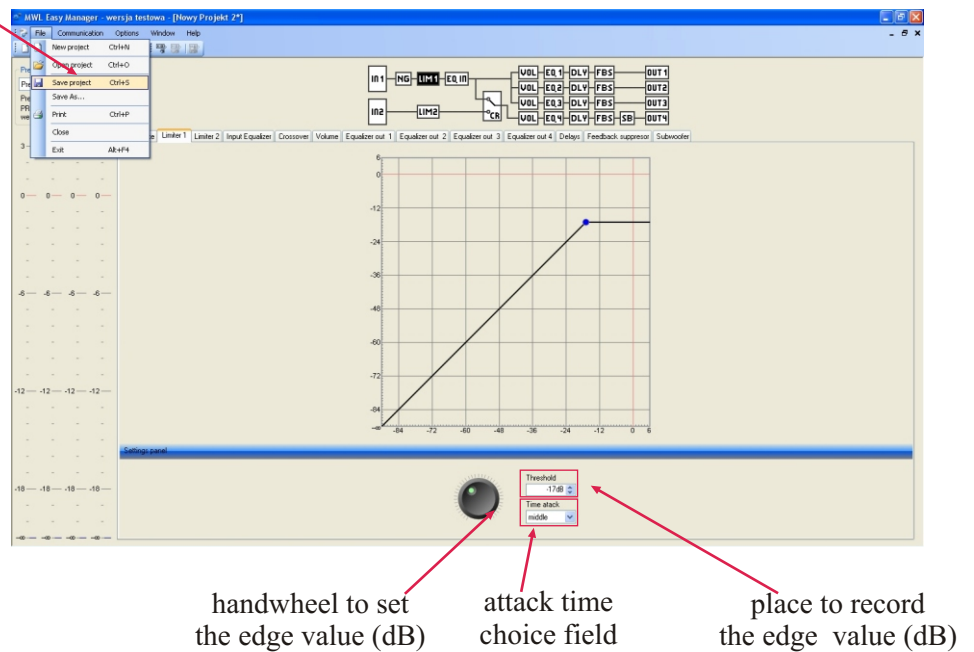This window appears and after choosing the device, the order "Join" should be clicked on once again .

settings part

particular parts of settings

place to open
"Settings panel"
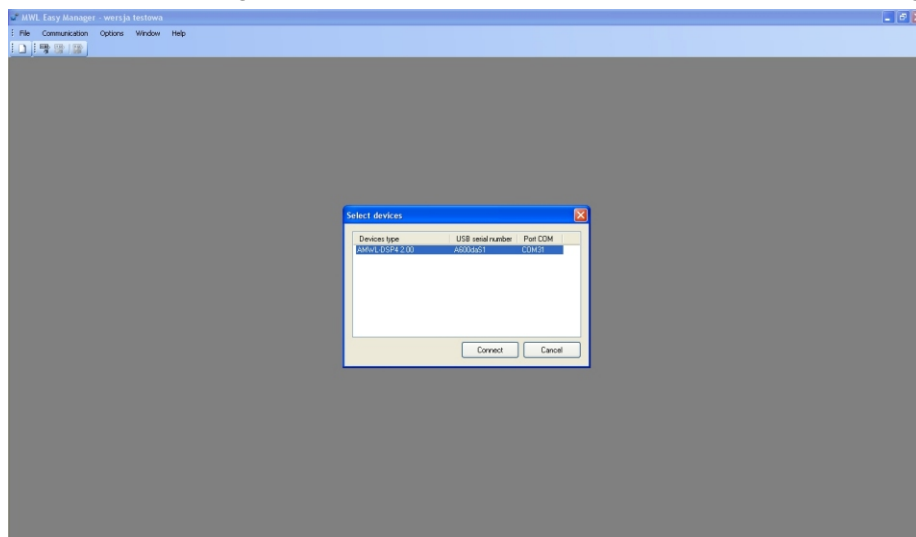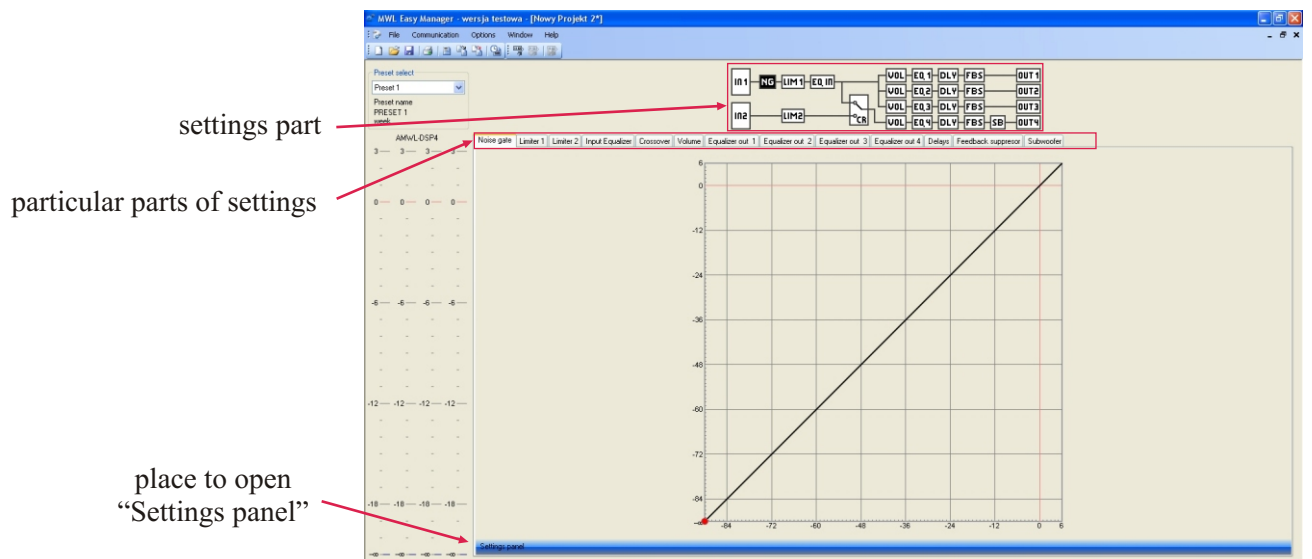
To record the project to the file, the option "Record the project" (Ctrl+S) in menu "file" should be chosen.

"Limiter" fold.

handwheel to set
the edge value (dB)

attack time
choice field

place to record
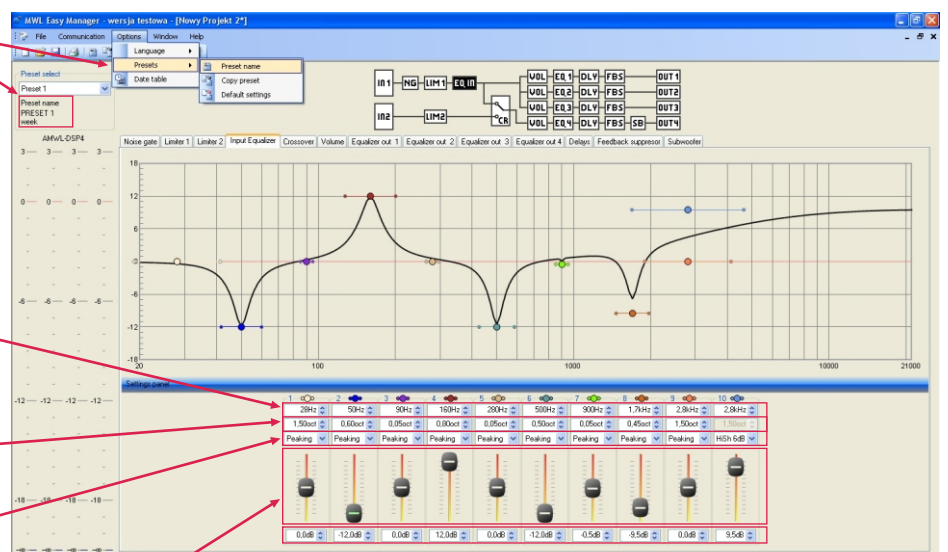the edge value (dB)

"options" - Presets - preset's name

part - "Equalizer input".

frequency regulation
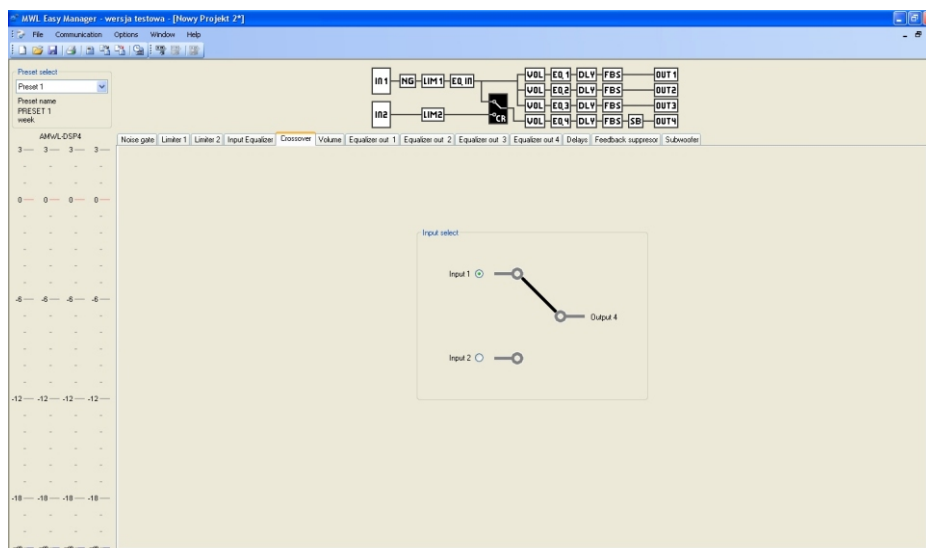(20Hz ÷ 21,2kHz)

filter width settings
(0,05oct ÷ 3oct)

filter type choise
(PeakingEQ,
LoSh6, LoSh12,
HiSh6, HiSh12)

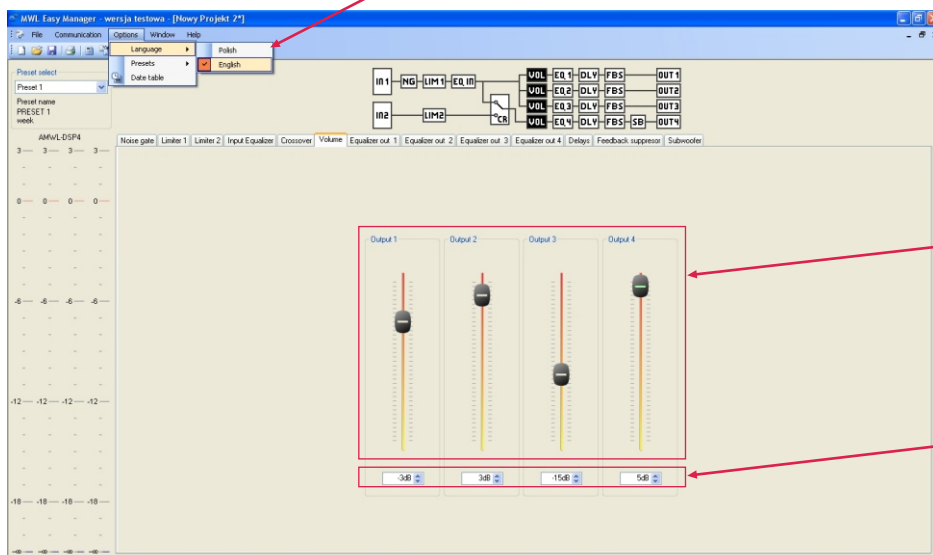gain attenuation regulation
(-12dB ÷ +12dB)

Crossover part - is created for ordering the output number 4 to input no 1 or no 2.

to input 1 are assigned
all inputs of the
amplifier, and to input 2
are assigned input 9
(LINE CD)
0 dB and inputs 1-8
enabled with
programmer 2
(MAINSUM-2)

menu "Options" - language - language choice (Polish, English)

"Gain part".

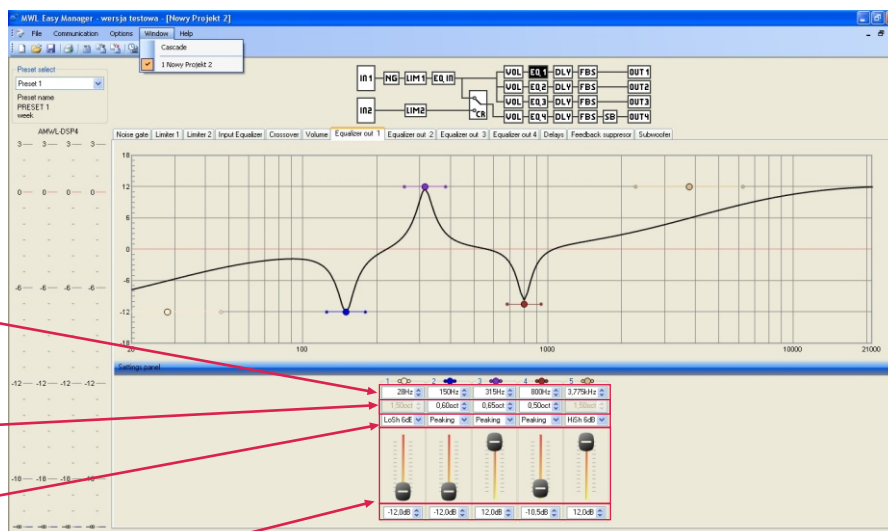gain regulation of
outputs 1 - 4.

place to record the values (dB)

"No 1 output equalizer" part.

frequency regulation
(20Hz ÷ 21,2kHz)

filter width setting
(0,05oct ÷ 3oct)

filter type choice
(PeakingEQ,
LoSh6, LoSh12,
HiSh6, HiSh12)

gain attenuation regulation
(-12dB ÷ +12dB)

"delay" part

delay adjustment
for particular outputs
(0m ÷ 85m)

place to record
the delay values
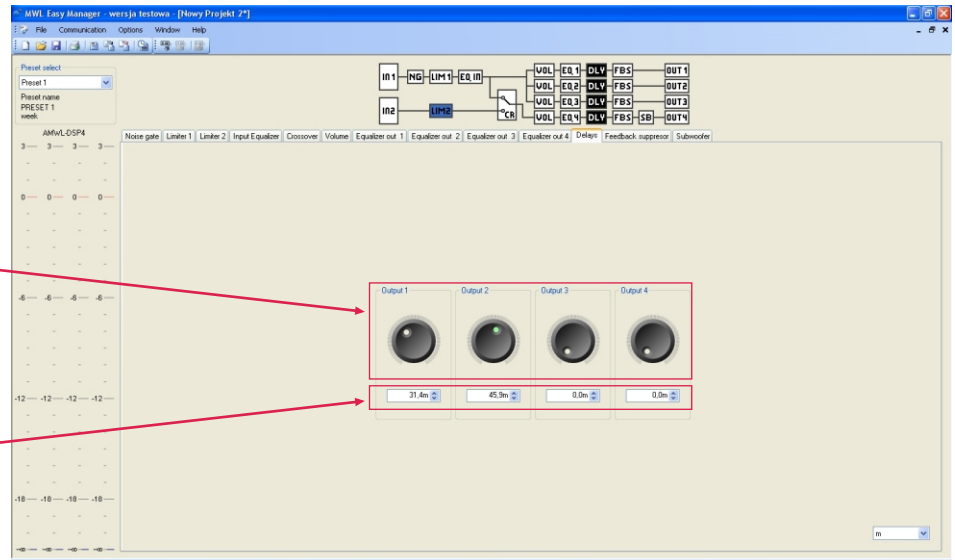
"Eliminator" part

eliminator's decoupling
method choice

frequency choice for
phase shifter method
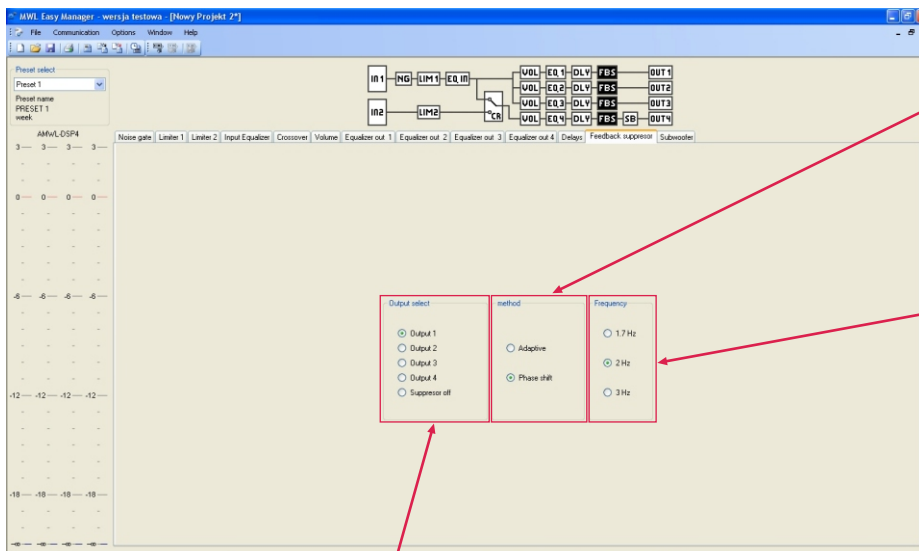
output choice, it means, on which output the eliminator is to be turn on

"Subwoofer" part

the Subwoofer works
after pressing the switch "ON"
(Subwoofer option is available
only in channel no 4)

frequency settings of Subwoofer's filter cut off
ranged 120Hz ÷ 472Hz

subwoofer's filter slope steepness choice
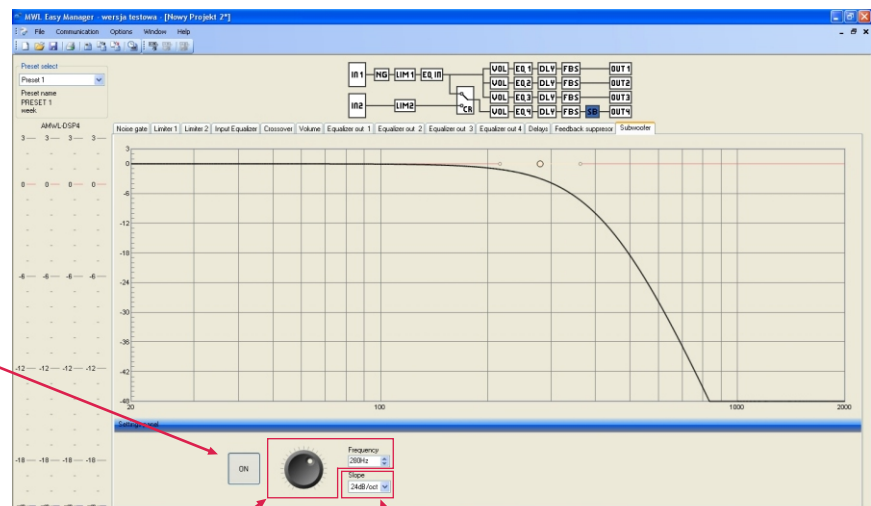
6. Menu structure of MWL Easy Manager program

MENU MWL Easy Manager
- **FILE**
  - **NEW PROJECT Ctrl+N**
  - **OPEN PROJECT Ctrl+O**
  - **SAVE PROJECT Ctrl+S**
  - **SAVE AS...**
  - **PRINT Ctrl+P**
  - **CLOSE**
  - **EXIT Alt+F4**
- **COMMUNICATION**
  - **CONNECT Ctrl+Shift+C**
  - **DISCONNECT**
  - **SAVE THE SETTINGS**
- **OPTIONS**
  - **LANGUAGE**
    - **POLISH**
    - **ENGLISH**
  - **PRESETS**
    - **PRESET'S NAME**
    - **PRESET COPY**
    - **ZERO SETTINGS**
  - **DATE BOARD**
- **WINDOW**
  - **CASCADE**
  - **PROJECT'S NAME**
- **HELP**
  - **ABOUT THE PROGRAM**

7. Prioritys.

Pict. 1

programmer channels 1-8

TIME-backup time control of active microphones

Programmer nr 1

Programmer nr 2 (MAINSUM 2)

Programmer nr 3 (MAINSUM 1)

Programmer nr 4

Adjusting the sensitivity of the channel LINE-CD

ATTACK- switching Microphone level control switch

top position OFF
bottom position ON

Programmer nr 1 - default settings: all switches (1-8) in the top position (OFF).
Switching any of the eight switches to the bottom position (ON) turns off the automatic in each channel. This is useful if you want to use one channel as a linear channel (music). ATTENTION! If you want to use priorities, the channel switch must be in the top position (OFF).

Programmer nr 2 - assignment of input channels 1-8 to the output channel mix 2 (MAINSUM 2). Assigned to input 2 (IN2) in the DSP and the output jack socket (MIX OUT).

Programmer nr 3 - assignment of input channels 1-8 to the output channel mix 1 (MAINSUM 1). Assigned to input 1 (IN1) in DSP.

Programmer nr 4 - default settings: switches 1 and 2 in position (OFF), switches 3 and 4 in position (ON).
Switch 1 **- OUT2 PRE/POST GATE**: upper position (OFF) POST GATE - all channels for MAINSUM-2 are assigned to the automatic. Bottom position (ON) PRE GATE - signals are assigned before automatic.
Switch 2 **- AUTO/MANUAL**: upper position (AUTO) - mixer auto work function; bottom position (MANUAL) - standard mixer work.
Switch 3 **- ATTENUATION OFF**: inactive microphone mute Settings, upper position - completely mute; bottom position - mute -15 dB.
Switch 4 **- LAST MIC**: upper position (OFF) - recently used microphone turns off after speaking, bottom position (ON) - recently used microphone is still active after the speaking.
ATTENTION! If you want to use a priority, this feature must be disabled (upper position OFF).

Programmer of channels(1-8) - default settings: All switches in the top position (OFF). Used to set the superiority of microphones.

Pict. 2

lider 1

deputy 2

3

4

5

6

7

8

Microphones
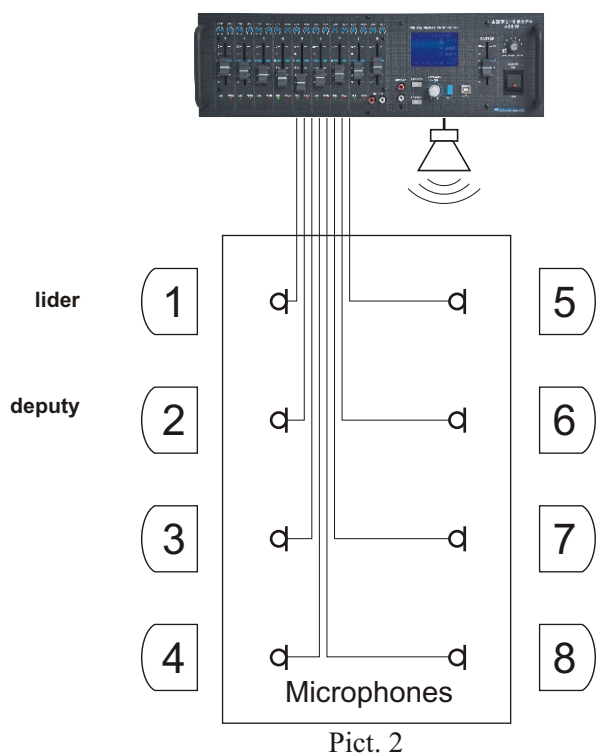
Setting of any priorities configuration: switching of any switches in any channel's programmer causes the setting of priority precedence of this channel over the previous chosen channel. For example: switching in channel no 1 programmer, the switch no 4 down (ON) causes that microphone no 1 can stop work of microphone no 4.

Lower configuration (picture no 3) shows the setting of the priority for the microphone no 1 and no 2 (picture no 2). The microphone no 1 has the priority over the microphones from 2 to 8, and the microphone no 2 has the priority over the microphones from 3 to 8, but is subordinate to the microphone no 1. It means, that the speeches of the microphones 3-8 can be stopped in any time by the leader (1) or his deputy (2), but the speech of the deputy (2) can be stopped only by the leader (1).

1   2   3   4   5   6   7   8

Pict. 3
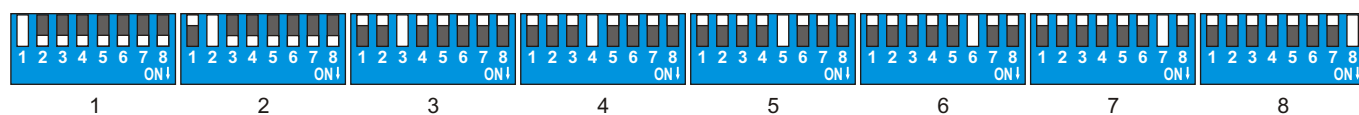
Lower configuration (pict. 4) shows the situation for three microphones, where each of them has the priority to two ones left. In such a configuration, the priority goes to that microphone which is activated as the first one. So, when he speech to tsomebody starts speaking to microphone no 2, the microphones no 1 and 3 are not active till the end of the microphone no 2. Microphones no 1 and 3 behave analogically. Such a configuration is possible for all eight microphones. Thanks to that, there is a situation, where only one microphone is always active and it makes impossible for somebody else to interrupt, what is valuable for the order of the conference
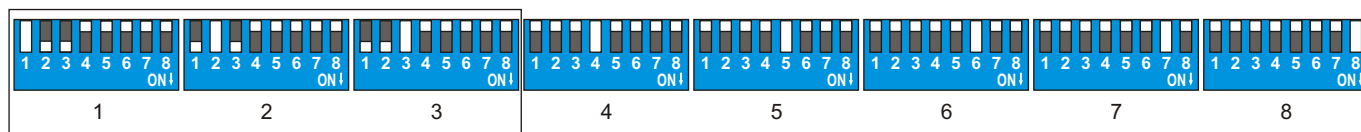

Pict. 4

8. **Configuration and operation of the amplifier with additional power terminal** (AMWL-9DSP/400+100).

AMWL-DSP4 amplifiers have an additional 100W power terminal (option), where the delay can be set.

100 W terminal can be switched on output DSP OUT 1 [21], DSP OUT 2 [28], DSP OUT 3 [27] or DSP OUT 4 [19].
It is the switch inside the amplifier. Red arrow in the picture on the right, shows where it is. The switch is described as the DSP outputs 1-4.
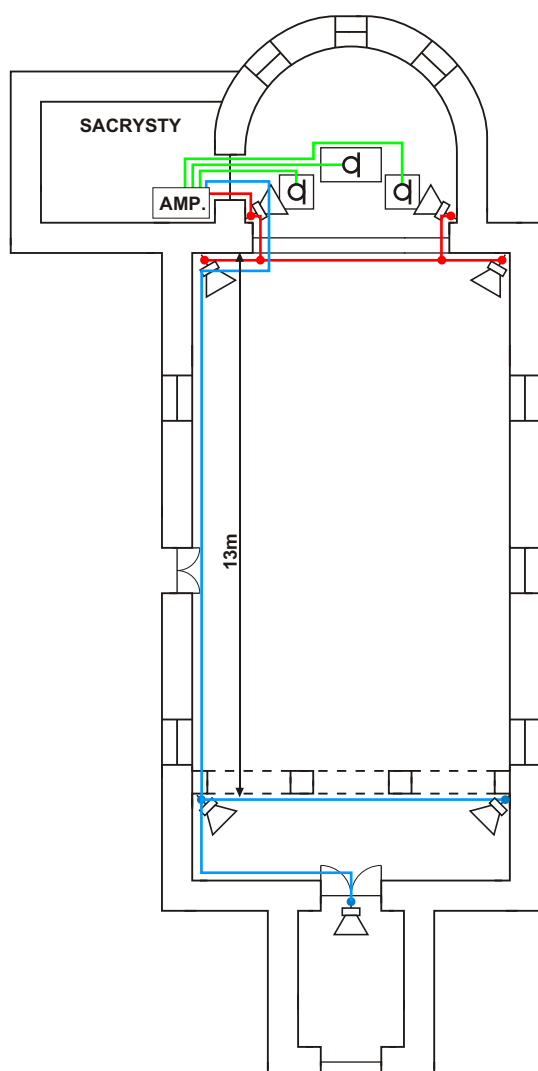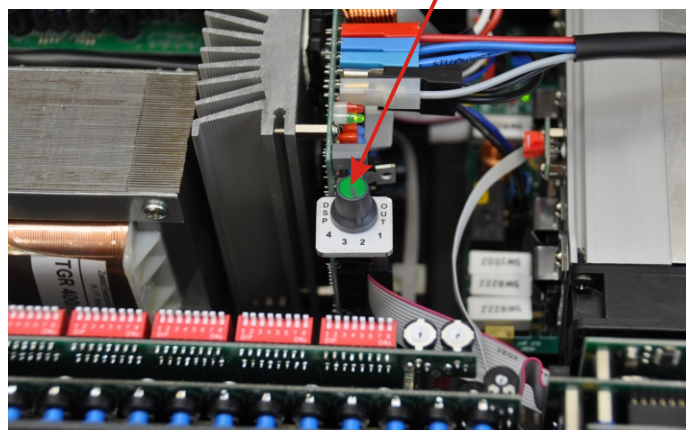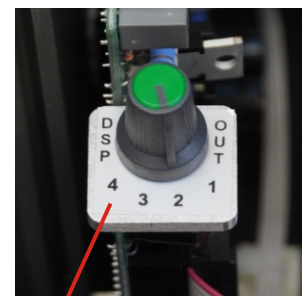
The picture shows the typical use of the amplifier in that version The main power terminal operates on one loudspeaker's circuit (red colour) but the other circuit (blue color)loudspeakers are spaced. Then, it is possible to adjust demanding delay on the DSP additional 100W power terminal, which operates on this loudspeaker's circuit. The additional 100W circuit can also be activated via connector INFO OUT PRESET 2. This means that for Preset 1, which is activated when for example in the church are "little people" the additional 100W circuit is inactive (break on connector INFO OUT PRESET 2). However, when in the church are a "lot of people" for enabled Preset 2, the additional speaker circiut 100V is activated.

An example of the AMWL-DSP4/400+100
amplifier use

9. AMWLC-9DSP4 amplifiers.

Each microphone channel of AMWLC-9DSP4 amplifiers is additionaly equipped with Compressor-Expander. Practically, compressor-expander allows to reach the fixed volume level independently of the input signal level. Compressor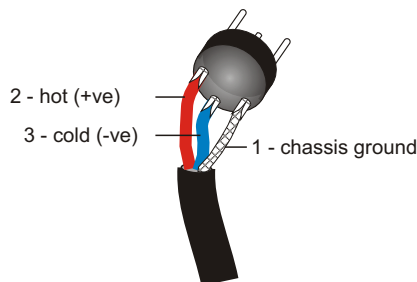 - expander parameters settings are fixed with switches and potentiometers that are located in the upper cover of the amplifier.

Expander adjustment in given channel   Compressor adjustment in given channel

Switch on/off in given channel
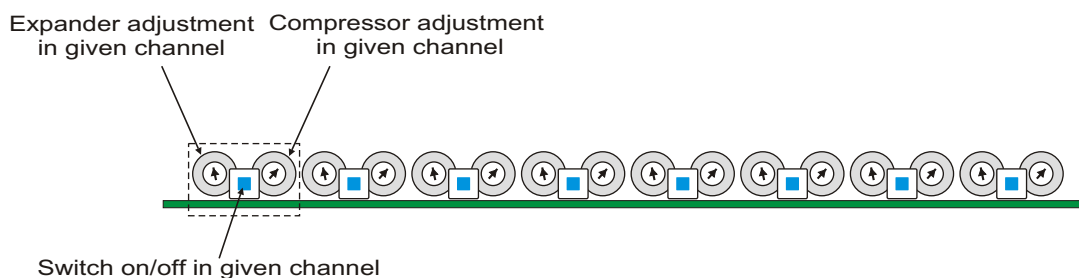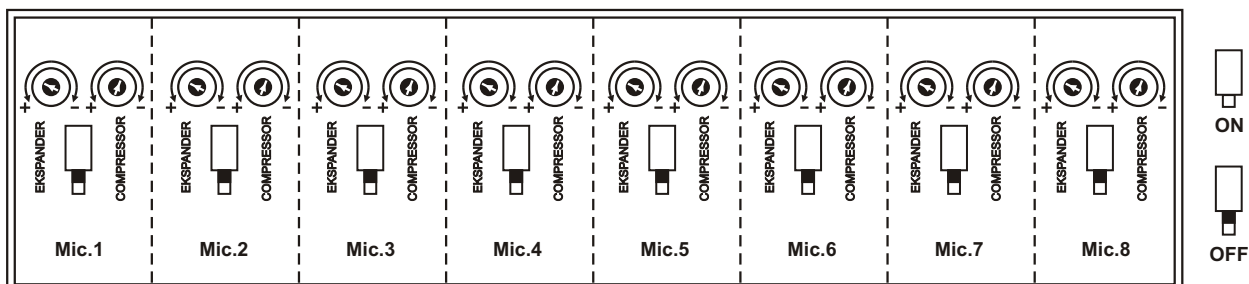
10. XLR microphone pin connection:

2 - hot (+ve)
3 - cold (-ve)
1 - chassis ground

Symmetrical input
(operating with Phantom power recommended)

2 - hot (+ve)
connection3 and 1
1 - chassis grounding
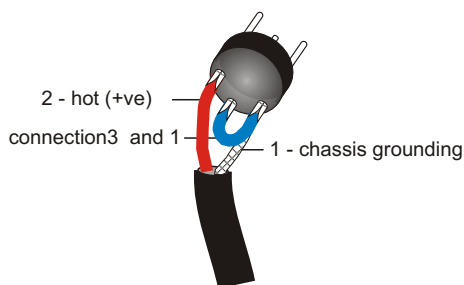
Asymmetric input
(plug in for the cable to 5m length at the asymmetric input
Phantom power off!)

11. Jack pin connection:

output 0 dB and input 0 dB connection

symmetrical   **Asymmetric**

hot(+ve) — signal input
cold (-ve) — chassis grounding
chassing grounding — chassis grounding
terminal
ring
sleeve

INSERT Socket
For the feedback eliminator, the equalizer,
the expander compressor,
the delaying line to be connected

coming back of the signal
signal output
chassis grounding
terminal
ring
sleeve

12. AMWL-9DSP amplifier operation in the sound system.
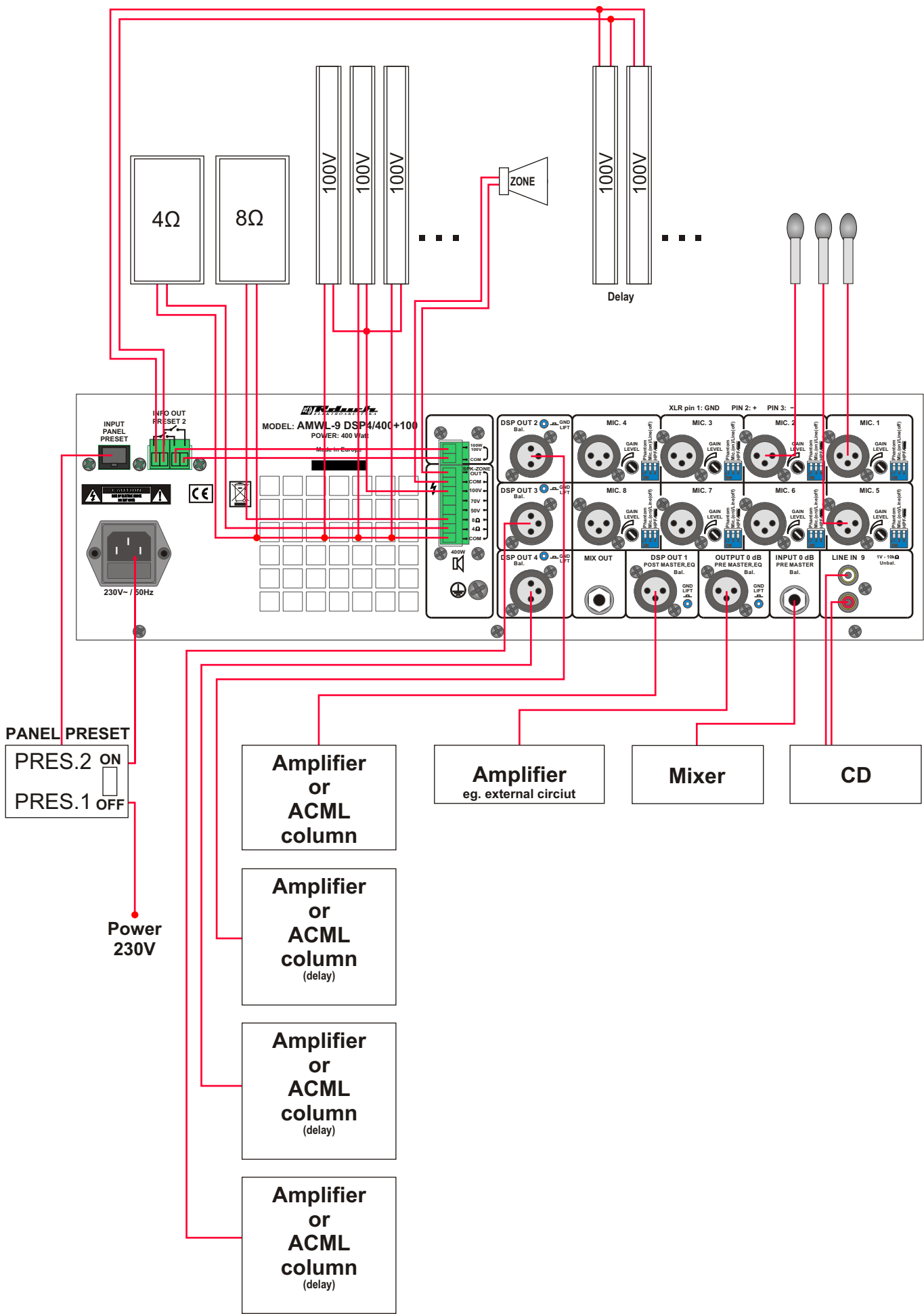
13. Technical data

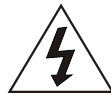| AMWL-9DSP4	
Output power (sinus)	400W, 600W, 400W+100W
Microphone inputs, symmetrical and electronic - MIC/LINE switch - MIC sensitivity control - LINE sensitivity control - impedance - phantom power supply - HPF filter - bass, soprano control - signaling	inputs XLR: 1-8 yes -40dB ÷ -15dB -15dB ÷ +5dB 1,6 kΩ 24V DC 100 Hz, 6dB/oct. ±12dB, 100 Hz, 10 kHz, shelving filter green diode - aktiv channel red diode - overdrive
Universal input (mono) - input sensivity - impedance - bass, soprano control	input RCA: 9 -10dB ÷ +12dB 10 kΩ ±12dB, 100 Hz, 10 kHz, shelving filter
Limiter	double, peak, on DSP input and on power end
noise gate	-90dB ÷ -25dB
10-point parametric equalizer on DSP input	±12 dB, 0,05 ÷ 3oct. 20Hz ÷ 21,2kHz LoSh6, LoSh12 HiSh6, HiSh12 Peak
5-point parametric equalizer	±12 dB, 0,05 ÷ 3oct. 20Hz ÷ 21,2kHz LoSh6, LoSh12 HiSh6, HiSh12 Peak
acoustic feedback suppressor	of adaption; phase shift
delay line	0 - 85 m
expander- compressor in channels	only in AMWLC
preset choice	yes
non- grounded symmetrical output	100V ,70V, 50V, 8Ω, 4Ω
adjustable zonal output	6-degree from 0-100V
frequency band	40 - 22 000 Hz
non-linear distortions	<0,1%
work temperature	from -5°C to +40°C
measurements: width/height/depth [mm]	443 x 135 x 340
weight [kg]	13,5

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

AVIS: RISQE DE CHOC ELECTRIQUE !
NE PAS OUVRIR !

UWAGA
RYZYKO PORAŻENIA PRĄDEM
NIE OTWIERAĆ

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

UWAGA

RYZYKO PORAŻENIA PRĄDEM
NIE OTWIERAĆ

WARNING OF DANGEROUS ELECTRICAL VONTAGE! IN THE HOUSING ARE NOT PROTECTET ELECTRONIC COMPONENTS WHICH HAVE A HIGHT ENOUGH CHARGE. IT CAN BE DANGEROUS!

THE EXCLAMATION POINT IS A FORM OF GUIDANCE IS NEEDED IN SUPPORT AND MEINTENANCE OF THE INSTRUMENT

CAUTION

TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE TOP COVER, NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

Control card

Date ....
Typ ....
Number ....

	(Noise generator) control	
	INPUT 0 dB Pre Master	☐
	INPUT 0 dB Post Master	☐
	Microphone – linear input	☐
	Linear input	☐
	Recording	☐
	Power output (40 , 8 , 50V, 70V, 100V)	☐
	100 Hz filter	☐
	Delay regulation	☐
	Feedback eliminator regulation	☐
	Zone regulation	☐
	Compressor – expander control	☐
	....	☐

Output power

	P	U	Z	
200W/100V/50Ω				☐
400W/100V/25Ω				☐
600W/100V/16,6Ω				☐
....				☐

Computer control :

Connection with MWL Control program test ☐
Correctness of saving the settings ☐
Factory reset ☐

Acoustic control :

Microphone – linear input ☐
Linear input ☐
Phantom power ☐
Timbre regulation of microphone – linear input ☐
Equalizer timbre regulation ☐
Feedback eliminator regulation ☐
100 Hz filter ☐
Inactive microphone mute ☐
"LAST MIC" function ☐
"AUTO/MANUAL" function ☐
Priorities for particular microphone channels ☐
Noise and hum level control ☐

General control :

230V AC power ☐
Fuse ☐
Ground measurements of the device (according to VDE 0701 norm) ☐
Other connections and connectors control ☐
Optical control of the whole ☐

Notices: ....
....
....
....
....

Signature ....

GUARANTEE CARD NO...........................

Below mentioned, efficient and in a good condition device is given to the buyer on …………..according to the rules stated in articles no 577-582 of the Penal Code. Rduch Elektoakustyka gives the buyer a guarantee on the proper working device for 36 months.

 Name of this device ....

Rduch Elekroakustyka company, located in Godów, 1 Maja Street 196, tel. (032) 4751803 to 06, fax. (032) 475 18 07,
 is called a producer in the further part of the contract.

I. OPERATING CONDITIONS

1. Plug – in power socket 230 V /50 Hz should have grounding or neutral grounding.
2. The device should be situated in a place with the temperature between +5ºC to +40ºC and of the
   humidity between 8 to 80%.
3. The device should not be a subject to vibration, should not be placed near the sources of strong electromagnetic fields and should be protected against the excessive sun exposure.

II. WARRANTY STATEMENTS
1. Warranty period starts from the date of selling the device by the producer.
2. In order to repair the device during the warranty period, it should be delivered to the company after the previous call or fax.
3. The producer provides 7 day repair period counted from the date of the adoption of the device to repair.
4. Requirement for a complaint is to provide the device in the original packing, with the guarantee card, to the place, where the device was bought.
5. In case of the damage of the device during the warranty period, that are caused because of the producer, or hidden defects in the material, the producer reserves the right to exchange the device into another one that is free of defects after having examined the causes of the device malfunction.

III. BEYOND THE WARRANTY
1. The warranty does not cover the mechanical damage or the damage caused by the user, or the damage caused by failure to comply with the universal principles of operation of the equipment and the requirements stated in point no 1.
2. Mechanical damages or other ones, not associated with the operation of the device, result in loss of warranty.
3. Tuning, regulations or the exchange of the fuses are not the subject to the warranty.
4. Producer, as the servicing part, reserves the rights to estimate and qualify the level of the damage.
5. In case of delivering the device in a good condition or the device that was not previously reported, the servicing costs, cleaning, testing and transport costs are paid by the person or the company that complain.
6. The guarantee card is invalid without the producer' s signature, date or the company stamp.

....
        Date   Stamp and signature

Warranty and post- warranty service

Date	Notices	Stamp and serviceman signature